Center for Molecular Microscopy
Collaboratory Application

The purpose of this application is to give us a general idea of what you're working on, to facilitate our scientific discussions with you, and to let us see whether there are areas of mutual scientific interest that can be explored with the types of technologies that we use. Your answers need not be comprehensive, but the more information you provide the better we can understand the project that you have in mind.

Please attach any relevant images or files to your email along with this document; please send all information in an email to nci-cmm@mail.nih.gov.

A. Contact Information
Principal Investigator:
Institution/ Laboratory:
Point of Contact (POC):
POC email:
POC phone:

B. Short Project Description
Please write a short paragraph (150-200 words) describing the scope of the research project you would like to pursue with us.

C. Detailed Project Description
This section is meant to give us a better idea of how it might be possible to address your scientific question of interest. Please answer any questions that are relevant to your project, and attach or include any relevant figures that may help us understand your research question.

1. What is the central question that you would like to address in collaboration with us? What, specifically, are you looking for?

2. How does the central question relate to your larger research project?

3. What is the model system (cells? tissues? purified samples?) that you are interested in imaging? What (if any) prior imaging work have you done on your system?

4. Do you have an idea what kinds of techniques you would like to use in collaboration with us?

5. Please outline proposed specific aim(s) and experiment(s) that would be undertaken with the CMM. Include details about the following, as appropriate:

    a. Experimental system
    b. Is quantitation required? If so, how many images or experiments will be required to have the necessary power for statistical measurements?
    c. What is the size of the structure/ object/ defect you are looking for?
    d. How common/rare is this phenomenon (for example, how many can one see per cell, or what percentage of cells show the effect)?
    e. Have you done any preliminary experiments with this system? Please attach any relevant data from these experiments.

6. For any macromolecular complexes you are interested in studying, please provide the following information:

    a. Number and identification of subunits and expected molecular weight
    b. Expected symmetry of the molecule
    c. Expected conformational states
    d. Is it soluble or membrane-integral?
    e. How are you currently purifying your molecule(s) of interest? Please list current buffer conditions.
    f. Have you analyzed your complex for purity and stability by gel filtration or SDS-PAGE? Native gel? Negative stain or other EM? Please attach any relevant data.
    g. If detergents are required, which detergents have you used in the purification process? Which detergents don't work and why?

7. Has your system been studied by other structural methods? Why choose FIB-SEM/cryo-EM for your project?

8. When collaborating with the CMM, it is expected that the proposing group will commit significant time and resources towards the project. In undertaking this project, what resources (personnel, equipment, time, or supplies) are you able to dedicate to the collaboration?

9. Should this collaboration be successful, what do you see as future directions for the research to take?

<u>D. Previous work and citations</u>

Please include detail about any previous experiments and/or list any citations on previous work that relates to this project.